Appl. No. 10/753,669
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Customer No. 27752

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A disposable article to be fitted to a wearer comprising:
a biosensor including at least one bio-recognition element, the biosensor being adapted to detect a target biological analyte present at a low concentration in bodily waste or on the wearer's skin.

2. (Original) The disposable article of Claim 1 wherein the bio-recognition element comprises a biologically reactive agent.

3. (Original) The disposable article of Claim 1 wherein the biosensor is selected from the group of: a biocatalytic biosensor and a bioaffinity biosensor.

4. (Original) The disposable article of Claim 3 wherein the bioaffinity biosensor is selected from the group of: a chemoreceptor-based biosensor and an immunosensor.

5. (Original) The disposable article of Claim 1 wherein the bio-recognition element is selected from the list including: an enzyme or sequence of enzymes; an antibody; DNA; an organelle; a membrane receptor protein; a natural or synthetic cell membrane; viable or nonviable bacterial, plant, or animal cells; at least a portion of a nerve bundle; at least a portion of a sensing organ.

6. (Original) The disposable absorbent article of Claim 5 wherein the bio-recognition element is selected from the group including *Acinetobacter baumannii* TOI36 and *Bacillus sp* TOI41.

7. (Original) The disposable absorbent article of Claim 6 wherein the bio-recognition element is disposed on a substrate selected from the group of: polymer based materials, hydrogels, tissues, nonwoven materials, and woven materials.

8. (Original) The disposable article of Claim 1 wherein the biosensor detects target biological analytes selected from the following group: pathogenic bacteria, colonic bacteria, viruses, parasites, bacterial toxins, fungi, enzymes.

9. (Original) The disposable article of Claim 5 wherein the pathogenic bacteria selected from the list: *Escherichia coli; Salmonella typhi*; *Salmonella paratyphi*; *Salmonella enteriditis; Salmonella typhimurium*; and *Salmonella heidelberg*; *Shigella sonnei*; *Shigella flexneri*; *Shigella boydii*; *Shigella dysenteriae*; *Vibrio cholerae*; *Mycobacterium tuberculosis*; *Yersinia enterocolitica*; *Aeromonas hydrophila*; *Plesiomonas shigelloides*; *Campylobacter jejuni*; *Campylobacter coli*; *Bacteroides fragilis*; *Clostridia septicum, Clostridia perfringens, Clostridia botulinum*, and *Clostridia difficile.*

10. (Original) The disposable article of Claim 1 wherein the biosensor detects the target biological analyte associated with a systemic or skin health condition in the wearer prior to the onset of clinically observable symptoms of the condition.

11. (Original) The disposable article of Claim 1 wherein the biosensor detects the target biological analyte only above a pre-defined threshold level.

12. (Original) The disposable article of Claim 1 wherein the biosensor additionally comprises a transducer.

13. (Original) The disposable article of Claim 12 wherein the transducer is selected from the group including electrochemical, optical, thermal, and acoustic transducers.

14. (Original) The disposable article of Claim 12 wherein the transducer signals only when target biological analyte is above a pre-defined threshold level.

15. (Original) The disposable article of Claim 1 wherein the biosensor provides a signal to at least one of the group of: the wearer, a caretaker, an actuator.

16. (Original) The disposable article of Claim 15 wherein the signal is a visible indication.

17. (Original) The disposable article of Claim 15 wherein the signal is qualitative.

18. (Original) The disposable article of Claim 15 wherein the signal is quantitative.

19. (Original) The disposable article of Claim 15 wherein the signal is durable throughout at least the usage life of the article.

20. (Original) The disposable article of Claim 1 wherein the article additionally comprises a cleaning element for the biosensor.

21. (Original) The disposable article of Claim 1 wherein the biosensor is affixed to a support element.

22. (Original) The disposable article of Claim 1 wherein the support element adheres to the wearer's skin.

23. (Original) The disposable article of Claim 21 wherein the support element is an adhesive tape.

24. (Original) The disposable article of Claim 1 wherein the biosensor is detachable from the article.

25. (Original) The disposable article of Claim 1 wherein the biosensor adheres to the wearer's skin.

26. (Original) The disposable article of Claim 1 wherein the bodily waste is feces, urine or menses.

27. (Original) The disposable article of Claim 1 wherein the bodily waste is residual fecal contamination located on the wearer's skin.

28. (Original) The disposable article of Claim 1 further comprising an actuator that performs a responsive function when the biosensor detects a target biological analyte.

29. (Original) The disposable article of Claim 28 wherein the responsive function is a signal to a caretaker, or the wearer.

30. (Original) The disposable article of Claim 28 wherein the actuator transforms a potential energy to perform the responsive function, the potential energy being one or more selected from the group of: mechanical energy, electrical energy and chemical energy.

31. (Original) The disposable article of Claim 28 wherein the responsive function is one or more selected from the group of: creating a void volume, treating skin, creating a foaming system and signaling a caregiver.

32. (Original) The disposable article of Claim 1 further comprising a receiver.

33. (Original) The disposable article of Claim 32 wherein the receiver is integral with said article.

34. (Original) The disposable article of Claim 32 further comprising a transmitter.

35. (Original) The disposable article of Claim 34 wherein the transmitter comprises an infrared telemetry transmitter.

36. (Original) The disposable article of Claim 1 wherein the biosensor has a Response Factor of at least 5 when exposed to feces.

37. (Original) The disposable article of Claim 1 wherein the biosensor has a Response Factor of at least 10 when exposed to feces.

38. (Original) The disposable article of Claim 1 wherein the biosensor has a Response Factor of at least 20 when exposed to feces.

39. (Original) The disposable absorbent article of Claim 1 wherein the biosensor has a Response Factor of at least 5 when exposed to a solution of skatole in physiological saline solution having a concentration of 180 micrograms of skatole per gram of physiological saline solution.

40. (Currently Amended) A disposable absorbent article to be fitted to a wearer comprising:
a topsheet;
a backsheet joined with the topsheet;
an absorbent core disposed between the topsheet and the backsheet; and
a biosensor disposed on the disposable article, the biosensor including at least one bio-recognition element wherein the biosensor is adapted to detect a target biological analyte present at a low concentration in bodily waste.

41. (Original) The disposable absorbent article of Claim 40 wherein the disposable article is chosen from the following group: a sanitary napkin, a diaper, a training pant and an adult incontinence device.

42. (Original) The disposable absorbent article of Claim 40 wherein the bio-recognition element comprises a biologically reactive agent.

43. (Original) The disposable absorbent article of Claim 40 wherein the biosensor is selected from the group of: a biocatalytic biosensor and a bioaffinity biosensor.

44. (Original) The disposable absorbent article of Claim 43 wherein the bioaffinity biosensor is selected from the group of: a chemoreceptor-based biosensor and an immunosensor.

45. (Original) The disposable absorbent article of Claim 40 wherein the bio-recognition element is selected from the list including: an enzyme or sequence of enzymes; an antibody; DNA; an organelle; a membrane receptor protein; a natural or synthetic cell membrane; viable or nonviable bacterial, plant, or animal cells; at least a portion of a nerve bundle; at least a portion of a sensing organ.

46. (Original) The disposable absorbent article of Claim 40 wherein the biosensor detects target biological analytes selected from the following group: pathogenic bacteria, colonic bacteria, viruses, parasites, bacterial toxins, fungi, enzymes.

47. (Original) The disposable absorbent article of Claim 46 wherein the pathogenic bacteria selected from the list: *Escherichia coli; Salmonella typhi*; *Salmonella paratyphi*; *Salmonella enteriditis; Salmonella typhimurium*; and *Salmonella heidelberg*; *Shigella sonnei*; *Shigella flexneri*; *Shigella boydii*; *Shigella dysenteriae*; *Vibrio cholerae*; *Mycobacterium tuberculosis*; *Yersinia enterocolitica*; *Aeromonas hydrophila*; *Plesiomonas shigelloides*; *Campylobacter jejuni*; *Campylobacter coli*; *Bacteroides fragilis*; *Clostridia septicum, Clostridia perfringens, Clostridia botulinum,* and *Clostridia difficile.*

48. (Original) The disposable absorbent article of Claim 40 wherein the biosensor adheres to the wearer's skin.

49. (Original) The disposable absorbent article of Claim 40 wherein the biosensor has a Response Factor of at least 5 when exposed to feces.

50. (Original) The disposable absorbent article of Claim 40 wherein the biosensor has a Response Factor of at least 10 when exposed to feces.

51. (Original) The disposable absorbent article of Claim 40 wherein the biosensor has a Response Factor of at least 20 when exposed to feces.

52. (Original)The disposable absorbent article of Claim 40 wherein the biosensor has a Response Factor of at least 5 when exposed to a solution of skatole in physiological saline solution having a concentration of 180 micrograms of skatole per gram of physiological saline solution.